

WHAT IS CLAIMED IS:

1. A surface acoustic wave device comprising:
a piezoelectric substrate having a first surface
5 on which comb-like electrodes are formed, and a second
surface; and
a support substrate joined to the second surface
of the piezoelectric substrate,
the piezoelectric substrate being made of lithium
10 tantalite, and the support substrate being made of
sapphire,
the following expressions being satisfied:
$$T/t < 1/3 \quad (1)$$
$$T/\lambda > 10 \quad (2)$$

15 where T is a thickness of the piezoelectric
substrate, t is a thickness of the support substrate,
and λ is a wavelength of a surface acoustic filter
propagated along the first surface of the piezoelectric
substrate.
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2. The surface acoustic wave device as claimed
in claim 1, wherein the piezoelectric substrate is a Y-
cut X-propagation piezoelectric substrate.
- 25 3. The surface acoustic wave device as claimed
in claim 1, wherein the surface acoustic wave device is
a filter.
- 30 4. A filter comprising:
a piezoelectric substrate having a first surface
on which comb-like electrodes are arranged so as to
form a transmit filter and a receive filter, and a
second surface; and
a support substrate joined to the second surface
35 of the piezoelectric substrate,
the piezoelectric substrate being made of lithium
tantalite, and the support substrate being made of

sapphire,

the following expressions being satisfied:

$$T/t < 1/3 \quad (1)$$

$$T/\lambda > 10 \quad (2)$$

5 where T is a thickness of the piezoelectric
substrate, t is a thickness of the support substrate,
and λ is a wavelength of a surface acoustic filter
propagated along the first surface of the piezoelectric
substrate.

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